

**REMARKS**

Upon entry of this Amendment, claims 1-3 remain pending and under current examination. In the Office Action,<sup>1</sup> the Examiner took the following actions;

- (a) rejected claims 1 and 7-10 under 35 U.S.C. § 102(e) as being anticipated by Yano et al. (U.S. Patent No. 6,740,590) ("Yano");
- (b) rejected claims 2 and 3 under 35 U.S.C. § 103(a) as being unpatentable over Yano;
- (c) rejected claims 21 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Yano in view of Uchikura et al. (U.S. Patent No. 6,579,153) ("Uchikura");
- (d) rejected claim 23 under 35 U.S.C. § 103(a) as being unpatentable over Yano in view of Kakizawa et al. (U.S. Patent No. 6,310,019) ("Kakizawa"); and
- (e) rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over Yano in view of Uchikura and further in view of Kakizawa.

Applicants traverse the rejections for the following reasons.

**Regarding the Claim Amendments:**

Applicants have cancelled claims 7-10 and 21-24, without prejudice or disclaimer of their subject matter, and amended claim 1 to include the elements of now-cancelled claims 7, 9, 21, and 24. Claims 4-6 and 11-20 were previously canceled.

**Rejection of Claims 1 and 7-10 under 35 U.S.C. § 102(e):**

Applicants request withdrawal of the rejection of claims 1 and 7-10 under 35 U.S.C. § 102(e) as being anticipated by Yano. The rejection of claims 7-10 has been rendered moot by the cancellation of those claims. In addition, Applicants traverse the rejection of claim 1 for at least the following reasons.

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<sup>1</sup> The Office Action may contain statements characterizing the related art, case law, and claims. Regardless of whether any such statements are specifically identified herein, Applicants decline to automatically subscribe to any statements in the Office Action.

In order to properly establish anticipation under 35 U.S.C. § 102, the Federal Circuit has held that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). *See also* M.P.E.P. § 2131.

Applicants’ independent claim 1 recites, in part, “polishing particles containing colloidal silica,” and “a surfactant containing potassium dodecylbenzenesulfonate and acetylene diol-based nonion.” Since the Examiner has admitted that Yano “does not expressly disclose that the polishing particles comprise[] colloidal silica” (Office Action, p. 6), and “does not expressly disclose that the surfactant comprises potassium dodecylbenzenesulfonate and acetylene diol-based nonion” (Office Action, p. 8), Yano does not anticipate claim 1.

Therefore, the 35 U.S.C. § 102(e) rejection over claim 1 is improper and should be withdrawn.

**Rejection of Claims 2 and 3 under 35 U.S.C. § 103(a):**

Applicants request reconsideration and withdrawal of the rejection of claims 2 and 3 under 35 U.S.C. § 103(a) as being unpatentable over Yano. Applicants respectfully disagree with the Examiner’s arguments and conclusions. A *prima facie* case of obviousness has not been established. As M.P.E.P. § 2142 states, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.”

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the

art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). M.P.E.P. § 2142, 8th Ed., Rev. 4 (October 2005), p. 2100-134.

Each of these requirements must "be found in the prior art, and not be based on applicant's disclosure." M.P.E.P. § 2143.

Applicants have previously established that Yano does not teach at least "polishing particles containing colloidal silica," and "a surfactant containing potassium dodecylbenzenesulfonate and acetylene diol-based nonion" (claim 1). In fact, this reference provides no suggestion or motivation for using the claimed components in combination. As Yano does not teach or suggest every feature of Applicant's independent claim 1, and certainly not dependent claims 2 and 3, or provide a proper motivation for using the combination of claimed components, the Examiner has not met the basic criteria required for a *prima facie* case of obviousness.

Accordingly, dependent claims 2 and 3 are allowable at least by virtue of their dependence from allowable base claim 1. For at least these reasons, the 35 U.S.C. § 103(a) rejection is improper and should be withdrawn.

**Remaining Rejections of Claims 21-24 under 35 U.S.C. § 103(a):**

Applicants request reconsideration and withdrawal of the rejections of claims 21-24 under 35 U.S.C. § 103(a). The rejection of claims 22 and 23 have been rendered moot by the cancellation of these claims. Further, the elements of now-cancelled claims 21 and 24 have been incorporated into independent claim 1. Accordingly, Applicants respond to the rejection of claims 21 and 24 as it pertains to claim 1.

It is initially noted that neither of the secondary references, alone or in combination, cure the fundamental deficiencies of Yano. Rather, each reference describes the individual use of certain components without ever recognizing the benefits associated with their combination. To highlight these differences, and in response to the rejection, Applicants submit the enclosed Declaration Under 37 C.F.R. 1.132 ("Declaration") of Gaku Minamihaba. The Declaration shows that the combination of the six elements of independent claim 1 are unique and possess unexpectedly superior properties. In the Declaration, Gaku Minamihaba describes a polishing slurry, containing components of the six claim elements, exhibiting excellent polishing properties in terms of polishing rate, polishing rate stability, and dishing. Specifically, when using the combination of the six elements of independent claim 1, the polishing rate was greater than or equal to 1000 nm/min, the polishing rate stability was  $\pm 10\%$  of the polishing rate of the first sheet of the sample, and the dishing was less than or equal to 30 nm.

On the other hand, a polishing slurry of Sample No. 1 containing Component A', which only includes a first complexing agent and does not include a second complexing agent, is inferior in polishing rate stability. Likewise, a polishing slurry of Sample No. 2, which does not include any one of the complexing agents, has a lower polishing rate, and is inferior in dishing. Similarly, polishing slurries of Sample Nos. 3-5 and 7, which do not contain Components B, C, E, and F, respectively, are inferior in all the polishing properties. Finally, a polishing slurry which does not contain Component E is inferior in dishing. Thus, the experiments detailed in the Declaration demonstrate that excellent polishing properties cannot be obtained by a polishing slurry other than the one including all six components recited in independent claim 1.

Yano only describes a polishing slurry containing Components A-D. This polishing slurry, however, does not contain Components E and F (two kinds of surfactants), i.e., potassium

dodecylbenzenesulfonate and acetylene diol ethylene oxide adduct. As shown in the data in the Declaration, a polishing slurry which does not contain potassium dodecylbenzenesulfonate is inferior in dishing, and a polishing slurry which does not include acetylene diol-based nonion (e.g., acetylene diol ethylene oxide adduct) is inferior in all the polishing properties. It is thus clear that a polishing slurry which contains neither potassium dodecylbenzenesulfonate nor acetylene diol ethylene oxide would not exhibit excellent polishing properties.

In addition, since Uchikawa merely describes potassium dodecylbenzenesulfonate, and Kakizawa merely describes acetylene diol ethylene oxide adduct, the teachings of these references would not render obvious the use of such components with the other claimed components, nor would they provide an expectation of successfully achieving the improved polishing properties described in the Declaration.

Moreover, the testing compares the claimed subject matter with a composition that is closer than the prior art applied by the Examiner, and thus the results are particularly significant. Indeed, M.P.E.P. § 716.02 explains that Applicants may compare the claimed invention with prior art that is more closely related to the invention than the prior art relied upon by the Examiner. Here, Yano only describes a polishing slurry containing Components A-D, Uchikawa only describes Component E, and Kakizawa only describes Component F. In contrast, the comparative testing set forth in the Declaration demonstrates that omission of any one of Components A-F would produce inferior polishing properties. Thus, the Declaration is viable and probative evidence of the non-obviousness of the claimed invention.

In view of the foregoing, Applicants submit that independent claim 1, and each claim dependent therefrom, is allowable. Accordingly, Applicants request that each of the 35 U.S.C. § 103(a) rejections be withdrawn.

**Conclusion:**

In view of the foregoing, Applicants request reconsideration of the application and withdrawal of the rejections. Because Applicants' amendments, arguments, and Declaration Under 37 C.F.R. § 1.132 have removed all of the pending rejections, claims 1-3 are in condition for allowance, and Applicants request a favorable action.

If there are any remaining issues or misunderstandings, Applicants request the Examiner telephone the undersigned representative to discuss them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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